151 ID

THE PLANT DISEASE REPORTER

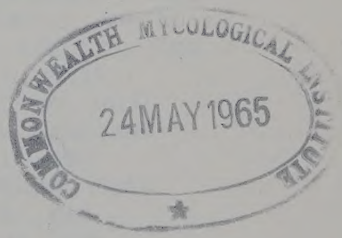
CROPS RESEARCH DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

Volume 48 Number 13

(Index Number)
Issued May 15, 1965



The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Crops Research Division serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

PLANT DISEASE REPORTER

Issued by

CROPS RESEARCH DIVISION

INDEX TO VOLUME 48

Prepared by Sheila D. Thompson

Crops Research Division
Volume 48

Plant Industry Station, Beltsville, Maryland
Index Number

AUTHOR INDEX

ABBOTT, E. V., 443
ABDEL-NABI, H., 268
ABDULEID, HAMDI Z., (894)
ADAIR, C. R., (462)
ADAMS, JAMES T., Jr., 114
AICHELE, MURIT D., (277), (280)
ALDERMAN, D. C., (204)
ALLAN, R. E., (895)
ALLEN, T. C., Jr., (333)
ALLEN, WAYNE R., (82)
ALLINGTON, W. B., 597
ANANTHANARAYANAN, S., 292
ANDERSON, NEIL A., 530
ANZALONE, LOUIS, Jr., 984
ARAGAKI, M., (8)
ARK, P. A., (871)
ARMSTRONG, G. M., 846
ARMSTRONG, JOANNE K., (846)
ARNY, D. C., (815)
ASHWORTH, L. J., Jr., 875

BACHELDER, S., (254)
BAILEY, W. K., (519)
BAIN, DOUGLAS C., 742
BAJPAI, G. K., (708), (711)
BALL, E. M., (597)
BARKER, K. R., 428
BARNES, D. K., (714)
BARNES, E. H., 687
BARNES, G. L., 572
BARTON, D. W., 353
BEAN, GEORGE A., 978
BEGA, ROBERT V., (206)
BELL, A. A., 721
BERAHA, L., 558, (747), (837)
BERRY, F. H., (514), 886
BERRY, R. W., (249)
BISSONNETTE, H. L., (703)
BLODGETT, EARLE C., 277, (280), 728, 996
BOEWE, G. H., 866
BOHN, GUY WESTON, 258
BONAR, LEE, 70
BORDERS, HUEY I., 325
BOYCE, JOHN S., Jr., (873)
BRADBURY, J. F., 104
BRANDT, ROBERT W., (974)
BRANDT, W. H., (649)
BRASE, K. D., (382)
BRAVERMAN, SAMUEL W., 402
BREECE, JAMES R., (258)
BRENNAN, EILEEN, 923
BRETZ, T. W., 418., 514, (886)
BRIERLEY, PHILIP, 5, 143
BRIGGLE, L. W., (262)
BRISTER, C. D., (176)
BROOKS, HOWARD J., 892
BROWDER, L. E., 906
BROWN, ALBERT L., 557
BROWN, M. F., 654
BRUEHL, G. W., 470, 863
BUDHRAJA, T. R., (991)
BURKE, DOUGLAS W., 789
BURT, E. O., (625)
BYNUM, H. H., 828

CALLAHAN, KEMPER L., 735
CALVERT, O. H., 466
CANDIA, J. D., (645)
CAPPELLINI, R. A., 879
CARASSO, F. M., (300)
CARPENTER, W. J., (966)
CAROSELLI, NESTOR E., 484
CATOVIC-CATANI, S., 47, 51
CHARPENTIER, LEON J., (636)
CHAUHAN, L. S., (711)
CHENEY, PHILIP W., (616)
CHENULU, V. V., 259, 491
CHILDS, J. F. L., (95)
CHORIN, MATHILDA, (134)
CLAYTON, C. N., 460
CONVERSE, R. H., 839
COOK, R. N., 254
COURTER, J. W., (18)
COYNE, D. P., (823)
CRAIG, F. WALDO, 468
CRAM, W. H., (12)
CROOKSHANKS, A. W., (12)
CROPLEY, R., 678
CROSSAN, D. F., 549
CULP, THOMAS W., 86, 608
CURL, E. A., 446
CZABATOR, F. J., (551)

DAINES, ROBERT H., 149, 152, (923)
DALE, J. L., 228, 661
DAMSTEEGT, V. D., (470)

DARRAG, ISMAIL E., (950)
DAS, C. R., (37)
DAS, N. P., (567)
DAVIS, D. R., (919)
DAVIS, J. R., (142)
DeLOACH, L. R., (524)
DESAI, M. V., (167), 947
DESJARDINS, PAUL R., 420, (772)
DICKERSON, O. J., (966)
DICKSON, R. C., (772)
DIMOND, A. E., (308)
DISHON, I., (853)
DOCHINGER, LEON, S., 107
DODY, D. G., (127)
DOOLING, O. J., 913
DOPSON, ROBERT N., Jr., 30
DRAKE, CHARLES R., 406
DRIVER, CHAS. H., 509, 803
DUNCAN, E. N., (599)
DUNLEAVY, J. M., (453)

EDGINGTON, L. V., 308
EDMUNDS, L. K., 300
EDWARDS, S. M., (262)
ELEUTERIUS, L. N., 366
ELGINDI, DAWOOD M., (894)
ELLETT, C. WAYNE, 487
EL-TOBSHY, ZEINEB, 925
ENGEL, R. E., (254)
ESSER, R. P., 533
ESTRADA, F., (462)
EVERSMEYER, H. E., 966
EYAL, Z., 653, (879)

FAULKNER, L. R., 190
FELDMAN, A. W., (544)
FELDMAN, J. M., 373
FELDMESSER, JULIUS, 95
FIELDHOUSE, D. J., (549)
FIFE, J. M., (229)
FILER, T. H., Jr. 588
FISHER, KENNETH D., (788)
FISHER, R. W., (104)
FLEISHER, ZIPORA, 280
FOIL, R. RODNEY, (986)
FORD, RICHARD E., (494), 564
FORREST, W. D., 645
FRAZIER, NORMAN W., (833)
FRENCH, D. W., (530)
FREYRE, R. H., (714)
FRIDLUND, PAUL R., 548
FROELICH, R. C., 367
FROSHEISER, F. I., 506
FUENTES F., SANTIAGO, (425)
FULTON, N. D., (294)
FUNK, A., 677
FUTRELL, M. C., (249)

GABRIELSON, R. L., 593, 801
GALLEGLY, M. E., (468)
GALVEZ, G., (597)
GARCIA, CARLOS DeLEON, (335)
GARDNER, M. W., (310), 871
GARREN, KENNETH H., 344, 349
GAY, J. DANNY, (480)
GEORGE, DONALD W., 162
GHAFFAR, ABDUL, 928
GILL, C. C., 21
GILL, D. L., 26, 648
GILMER, R. M., 338
GINNS, J. H., Jr., (509), (803)
GOLSEN, E. W., 914
GONZÁLEZ, J., (462)
GOOD, J. M., (26), 194, 199
GOODMAN, ROBERT N., (180)
GOSSETT, D. M., 508
GOTH, R. W., (494)
GOTO, MASAO, 858
GOTO, S., (736)
GOUGH, F. J., 971
GREEN, H. J., 578
GREEN, RALPH J., Jr., 960
GRIFFIN, G. D., 458
GRIFFIN, H. D., 615
GUDAUSKAS, ROBERT T., 418
GUENGERICH, H. W., 343
GUTENMANN, WALTER H., (525)
GUTHRIE, J. W., (723)

HAASIS, FRANK A., (460)
HAGEDORN, D. J., 318, (335)
HALFON-MEIRI, A., 853
HALISKY, PHILIP M., 359
HALL, D. H., (749)
HALLIWELL, ROBERT S., 136, (419)
HAMEIRI, Y., 62
HAMILTON, J. M., 295
HAMILTON, R. I., 68
HAMMONS, R. O., (729)
HANNON, CHANCELLOR I., 471, 476
HANSBROUGH, THOMAS, 986
HANSEN, J. D., (446)
HANSON, E. W., (270)
HARDING, PAUL R., Jr., 43, 808
HARJUNG, M. K., (102)
HARTLEY, D. E., 581
HEALD, C. M., Jr., 499
HEDDEN, ORVE, (698)
HELTON, A. W., 881
HENDERSON, WARREN R., (690)
HENSLEY, S. D., (645)
HEROLD, F., 603
HEUBERGER, J. W., (316)
HEYBROEK, H. M., 187
HIBBARD, A. D., (900)
HICKS, R. D., (466)
HILDEBRAND, E. M., 356, 489, 817
HILU, H. M., (777)
HINDS, T. E., 610
HINE, R. B., (736)
HOFFMANN, J. A., 575
HOLLIS, JOHN P., (986)

HOLMES, F. W., (187)
HOLTON, C. S., (895)
HONMA, SHIGEMI, 623
HOOKER, A. L., 777
HOPPE, PAUL E., 391, 815
HOPPER, W. EDWARD R., (225)
HORN, NORMAN L., 331
HORNE, C. WENDELL, 419
HOSKINSON, P. E., 599
HOUSTON, DAVID R., 788
HSI, DAVID C. H., (381)

ICHIKAWA, S. T., (634)
ILLMAN, Wm. I., 68

JACKSON, CURTIS R., 264, 821, 980
JAWORSKI, C. A., 88, (956)
JENKINS, S. F., Jr., 619
JENKINS, W. R., (499), 692
JENNINGS, P. R., (462)
JENSEN, G. L., (216)
JENSEN, HAROLD J., 225, 333, 990
JOHNSON, E. M., 111, 742
JOHNSON, JERRAL D., (136)
JOHNSTON, C. O., (653)
JONES, ALAN L., 182, 385
JONES, THOMAS W., 967
JUSKA, F. V., (433)

KAINSKI, J. M., 664, (756)
KAIS, A. G., 553, 686
KALANI, I. K., 100
KELMAN, ARTHUR, (578)
KENDRICK, E. L., 16, 379
KERN, FRANK D., 93
KILPATRICK, R. A., 669
KING, JOCELYN, (438)
KIRKPATRICK, HUGH C., 616, 855
KLEMMER, HOWARD W., 848
KNORR, L. C., (476), 478
KRAMER, C. L., (324)
KREBILL, R. G., 532
KREITLOW, K. W., 433
KRULL, C. F., (462)
KRUSBERG, L. R., (721)
KUHN, C. W., 729
KULIK, MARTIN M., 283
KUNISAKI, J., (8)

LAIRD, E. F., Jr., 772
LAMBE, R. C., (955)
LAMEY, H. A., 176, 462
LANE, C. L., (114)
LANGLEY, B. C., (875)
LEBSOCK, K. L., (971)
LEMMIEN, WALTER A., (110)
LEONE, IDA A., (923)
LEPPIK, E. E., 41
LEWIS, G. D., 364, 436
LIMBER, DONALD P., (557)
LINDBERG, G. D., (176)
LINDNER, R. C., (616), (855)
LITTLEFIELD, LARRY J., 169
LITTON, C. C., (111)
LOEFFEL, FRANK, (742)
LORBEER, JAMES W., 941
LORING, L. B., 99
LOWNSBERY, B. F., 218, 222
LUCAS, G. B., 524

MacLEOD, JOHN, (316)
MAHADEVAN, A., (484)
MALM, NORMAN R., 381
MANSOUR, NABEEL S., (623)
MARTENS, J. W., (815)
MARTIN, W. J., (149), 606
MARTINEZ, A. L., 131
MATHUR, R. S., 708, 711
MATHUR, S. C., (708)
McBETH, C. W., 634
McCAIN, ARTHUR H., 139
McCOMBS, C. L., (619)
McCOY, C. E., (228)
McCRUM, R. C., (286)
McDANIEL, M. C., 294
McELROY, F. D., (190)
McGLOHON, NORMAN E., (418)
McGRATH, HILDE, 71
McGREW, J. R., 929
McKINNEY, H. E., (409)
McMILLAN, ROBERT T., Jr., 909
McRITCHIE, J. J., (948)
McWHORTER, F. P., 913
MEADER, E. M., 286
MERRIFIELD, ROBERT G., (986)
METS, KEITH, (258)
METZGER, R. J., (379)
MICHEL, L. J., (763)
MILBRATH, J. A., 124, (277)
MILLER, DOUGLAS R., (828)
MILLER, P. M., (246)
MILLER, P. W., 69
MILLIKAN, D. F., (343), 900
MILLS, W. D., (525)
MISHANEC, W., (353)
MOHAMED, HOSNI A., 681, 950
MORGAN, FREDERIC L., 140
MORGAN, G. A., (12)
MORGAN, OMAR D., 693, 696
MORTON, DONALD J., (63), (88), 89, 956, 957
MOWRY, JAMES B., 272
MOZUMDER, B. GUHA, (484)
MUKHERJI, S. K., 567
MURASHIGE, T., 8

NAKANO, RICHARD Y., (848)
NAUER, E. M., (56)
NELSON, W. L., (863)
NENE, Y. L., 120
NEVILL, J. R., (295)
NICHOLS, CARL W., (204)
NOFFSINGER, T. L., (704)

OESTER, LOUIS, (990)
OFFORD, H. R., 912
O'REILLY, H. J., (204)
ORELLANA, R. G., 519
OSHIRO, L. S., 736
OSTAZESKI, STANLEY A., 770
OSTROWSKI, RICHARD, (990)
OTEIFA, BAKIR, A., 894
OWEN, JOHN H., 480

PAGE, GLEN E., (225)
PALTI, J., (62), 106
PAPAVIZAS, GEORGE C., 537
PARKER, K. G., 382, (525)
PASS, BOBBY, (742)
PATE, J. B., (599)
PATEL, G. J., (947)
PATEL, P. N., 335
PATEL, R. M., 167
PATT, J., 761
PAVGI, M. S., 340
PAXTON, J. D., 142
PEACHER, P. H., (913)
PERSON, L. H., 750
PETERSON, GLENN W., 781, 862
PETERSON, J. L., (653)
PHILLIPPE, MARY RUTH, (936)
PINE, T. S., 586
PIRONE, THOMAS P., (645), (984)
POKORNY, F. A., (307)
PONTIS, R. E., (373)
POWELL, W. M., 70, 307
PRASAD, S. K., (235)
PROVVIDENTI, R., (353)
PURCIFULL, D. E., (749)
PURDY, LAURENCE H., 159, 895

RAABE, ROBERT D., 416, 673
RACKHAM, R. L., 204
RADEWALD, J. D., (409)
RANIERE, L. C., (77)
RANKIN, H. W., (194)
RANNEY, C. D., 241
RAO, VASANT GURUNATH, 397, 399, 629, 733
RASKI, D. J., (235)
RATCLIFFE, T. J., (89)
REBOIS, R. V., (95)
REDISKE, J. H., (234)
REICHERT, I., (211)
REINERT, R. A., (111)
REYES, LUCAS, 249
REYNOLDS, DAVID A., (420)
REYNOLDS, J. E., (124), 718
RHOADES, H. L., 303, 568, 994
RHODES, A. M., 54
RICH, AVERY, E., (47), (51), (286)
RICH, SAUL, 246
RIFFLE, JERRY W., 964
RILEY, J. A., 704
ROBERT, ALICE L., 943
ROBERTSON, D. G., 888
RODRIGUEZ V., ANTONIO E., (425)
ROHDE, C. R., (379)
ROISTACHER, C. N., 56
ROMANKO, R. R., 311
ROOT, R. A. (654)
ROSENAU, W. A., 948
ROSENOW, D. T., (249)
ROSERO, M., (462)
ROTEM, J., 211
ROTH, J. N., 649
ROTH, LEWIS F., (99)
ROWELL, J. B., 154
RUBIN, H. L., (914)
RUEHLE, JOHN L., 60, 534
RUPPEL, E. G., 714
RUSHDI, M. H. K., 143, 282
RYDER, EDWARD J., 522

SAKSENA, K. N., 127, 756
SALISBURY, P. J., (12)
SANTIAGO, ALMA, (714)
SAPPENFIELD, W. P., (466)
SASSER, J. N., (534)
SATOUR, MOKHTAR M., (359)
SAVAGE, DONALD C., (808)
SCARPA, M. J., 77
SCHAREN, A. L., 262, 797
SCHARPF, ROBERT F., 66
SCHIEBER H., EUGENIO, 425
SCHMID, GUSTAV, (382)
SCHNATHORST, W. C., 90
SCHNEIDER, C. L., 843
SCHREIBER, LAWRENCE R., 207
SCHROEDER, HARRY W., 288
SCHROEDER, W. T., (353)
SCHUSTER, M. L., 823
SCHUSTER, MICHAEL F., 902, 955
SCHWARTZE, C. D., 833
SCOTT, D. H., (929)
SEAMAN, W. L., 69
SECHLER, DALE, 919
SEN GUPTA, P. K., 37
SHAFFER, WILLIAM H., Jr., 180
SHAH, H. M., (947)
SHANDS, HENRY, 784
SHANE, JAMES, (742)
SHAW, LUTHER, (508)
SHEA, KEITH R., 234, 512
SHEPHERD, R. J., 749
SHIGO, ALEX L., 794
SHOEMAKER, P. B., (364), (436)
SHOEMAKER, R. A., (69)
SHURTLEFF, MALCOLM C., 18
SILBER, GUSTAVE, 741
SILL, W. H., Jr., (127), (756)
SIMONS, M. D., 763
SINCLAIR, J. B., (268), (294), 574, (925)
SINGH, JASWANT, (340)
SINGH, KAMLA, (823)
SINGH, KISHAN, 991

SCOTLAND, C. B., (311), 502
SMART, GROVER, C., Jr., 388, 542
SMITH, M. A., (558), (747), (837)
SMITH, RICHARD S., Jr., 206
SNOW, G. A., (366), (367), 551
SORRELS, S. S., (551)
SOWELL, GROVER, (729)
STALEY, JOHN M., 562
STEELE, ARNOLD E., 229, 396
STEINBAUER, C. E., (817)
STONER, WARREN N., 640
STRONG, FORREST C., 110
STUTEVILLE, D. L., 270
SUIT, R. F., 544
SUNDERMAN, DONALD W., 394
SWARUP, G., 235
SZKOLNIK, M., (295)

TARJAN, A. C., 375
TAYLOR, D. P., 451
TAYLOR, JACK, 954
TEGETHOFF, ALFRED C., 974
TELIZ-ORTIZ, MOISES, (335)
TEMKIN-GORODEISKI, NAOMI, 134
THOMAS, C. A., (608)
THOMASON, I. J., 409
THOMPSON, HUGH E., (324)
THOMPSON, S. S., 419
THORNBERRY, H. H., (259), (491), 936
TICKNOR, R. L., (581)
TIMIAN, R. G., 216, 703
TINER, JAMES V., (370)
TIPPETT, R. L., (443)
TODD, EDWIN H., 442
TOMPKINS, DANIEL R., 528
TOOLE, E. RICHARD, 585
TOWERS, BARRY, 767
TREMAINE, J. H., 82
TUCKER, MELVIN C., (370)
TWEEDIE, H. C., (687)

ULLSTRUP, A. J., 414

VAARTAJA, O., 12, 438
Van DYKE, C. G., (777)
Van GELUWE, J. D., 525
VEECH, JOSEPH A., 873
VERMA, S. C., (711)
VESTAL, EDGAR F., 754
VIEIRA, CLIBAS, (784)
VOIGT, R. L., (300)
VOLCANI, ZAFRIRA, 256

WADE, E. K., (318)
WALDHER, J. T., (575)
WALKER, EGBERT H., 997
WALKER, J. C., (335)
WALKINSHAW, C. H., (686)
WALLACE, J. M., (131)
WALTERS, H. J., 935
WATSON, R. D., 723
WEATHERS, L. G., 102
WEBB, R. E., 321
WELCH, N. C., (409)
WESTER, R. E., 316
WHITAKER, THOMAS W., (258)
WHITE, L. V., (634)
WILKINSON, D. R., (777)
WILLIAMS, A. S., 119
WILLIAMS, N. D., (971)
WILLIS, WILLIAM G., 324
WILLISON, R. S., (82)
WILLS, W. H., 32, 35
WILNER, J., (12)
WILSON, CHARLES L., 370
WILSON, E. E., (142)
WILSON, J. D., 500, 698
WILSON, V. E., 453
WINCHESTER, J. A., 625, 782
WINSTEAD, N. N., (619), 690
WITCHER, WESLEY, (114)
WOLFENBARGER, DAN A., 811
WOOD, FRANCIS, A., 441
WORLEY, RAY E., 63, (956), (957)
WRIGHT, W. R., 747, 837
WYLLIE, T. D., (466)

YARWOOD, C. E., (21), 24, 310, 933
YIRGOU, D., 672
YOUNG, P. A., 122
YOUNIS, H., (106)

ZAUMEYER, W. J., 494, (784)
ZIMMER, D. E., 456
ZUCKERMAN, BERT M., 170, 172
ZUMMO, NATALE, 636
ZYCH, C. C., (451)

Abutilon whitefly: native hosts in Maryland, 489
Aerobacter cloacae: 558
Agrobacterium tumefaciens: 664; 673
Air pollutants: importance of variety in ozone plant damage, 923
Alabama: 418
Albizia julibrissin: vascular wilt of wilt-resistant cultivars, 648
Alfalfa: diseases in Kentucky in 1963, 111; mosaic virus, prevalence in Minnesota, 506
Alternaria: blight of sesame in Mississippi, 608; Cercospora-Alternaria leaf blight complex of cotton, 466
--- spp.: isolated from cherries with fruit rot, in India, 100; new leaf spot of rose in India, 397
--- tenuis: associated with black shoulder of tomatoes, 956
Amylostereum sp.: inoculation experiments with, from a wood wasp, 438
Anguina sp.: found on California oatgrass for first time in the Northwest, 990
Angular leaf spot: of cucumber, in Israel, 256; epiphytotic of, in tobacco, 419
Annona squamosa: a new fruit spot of, in India, 399
Annosus root-rot: of slash pine, effects of climate, 509; in young pines planted on an infested site, 803
Announcements: 71; 420; 914; 997
Anthracnose: of cucumber, detached leaf method of screening fungicides for control, 331; on cucurbits, three new races, 619; of dry bean in Brazil, 784
Antibiotics: seven, showed significant inhibition of Xanthomonas malvacearum, 268
---: Agrimycin, use of spray in asexual propagation of cauliflower, 623
---: cycloheximide, for control of brown spot on longleaf pine, 551; cycloheximide semicarbazone, inhibits Scirrhia acicola growth in culture, 553
---: phleomycin for control of wheat stripe rust, 159
---: phytoactin for control of wheat stripe rust, 162
---: streptomycin, compatibility with fungicides or insecticides for apple sprays, 180
Aphanomyces root rot: of peas, 537
Apple: heat therapy for virus-free clones, 343; maximum orchard susceptibility to fireblight, 272; variety resistance to Helminthosporium leafspot, 954
---: -cedar rust, fungicide evaluation, 295
---: chlorotic leaf spot virus, transmitted from Chenopodium amaranticolor to apple by inarch grafting, 678
---: fireblight, compatibility of streptomycin with fungicides or insecticides, 180
---: powdery mildew of, fungicide evaluation, 295
---: scab: fungicide evaluation, 295; persistence of organic mercury spray residue in the fruit, 525
---: tobacco mosaic virus recovered from, 5-year test period, 855
Apricots: bacterial spot can affect fruit production in midwest, 900
---: Royal (Blenheim), symptomless reservoir of twisted leaf virus of sweet cherry, 548
Arceuthobium campylopodum f. campylopodum: 912
Arkansas: 370; 661; 913
Ash: die-back, survey of condition of trees in 6 northeastern States, 974
Asparagus: root rot, resistance, 364
---: rust, fungicide for control, 436
Aspen: ceratocystis canker of, 441; distribution of cankers in Colorado, 610
Aspergillus spp.: preharvest entry into damaged peanut pods, 875
--- crown rot: of peanut, control by seed treatment, 264
--- glaucus: 283
--- niger: 853
Assay: bio-, of turnip mosaic virus on Chenopodium amaranticolor, 491

Baccharis pilularis: powdery mildew on, infected only when adjacent to cultivated ground, 933
Bacteria: associated with fluorescent spots in wheat, 797; Corynebacterium flaccumfaciens var. aurantiacum population trends and movement of, in tolerant and susceptible beans, 823; orchid pathogens, 736; relationship to fungi and grubs on decline of birdsfoot trefoil, 406; unidentified, on pepper, 89
Bacterial blight: of canning peas in Wisconsin, 318; of cotton, inhibition of, 268; of dry bean in Brazil, 784
--- brown spot: of bean, in Wisconsin, 335
--- crown gall: of Macadamia ternifolia in Hawaii, 673; survey in Kansas, 664

--- fire blight: chemical control, in vitro, of Erwinia amylovora, 182; susceptibility of Stewart strain of Bartlett pear, 892
--- leaf blight: of rice, "kresek" and pale yellow leaf are new symptoms of, 858
--- leaf spot: of Guizotia abyssinica in Ethiopia, 672; of pepper, 750; of sesame, in Mississippi, 86
--- necrosis: of tomatoes, 558
--- spot: on apricots, 900; of peach, control with copper-zinc chromate and dodine, 152; of pepper, effect of dwarfing compounds added to fixed copper sprays for control, 549
--- wilt: of bean spp., 823; of tomatoes, on newly cleared Klej sand, in relation to nutrient levels, 88
Bakanae: of rice in India, 340
Banana: black heart disease, in Israel, 134
Barley: ozone toxicity in, 919
---: scab in South Korea, epiphytotic in 1963, 754
---: stripe disease of, estimating loss due to, 708
---: yellow dwarf virus: degree of resistance in Ethiopian varieties, 470; 20 Kansas isolates transmitted by 4 aphid species, 756; transmission of a North Dakota isolate by 3 aphid species, 216
Beans: alfalfa mosaic virus, indicators for in Minnesota, 506
---: bacterial brown spot of, in Wisconsin, 335
---: Corynebacterium flaccumfaciens var. aurantiacum, movement and multiplication in tolerant and susceptible types, 823
---: diseases: of dry beans in Brazil, 784; of garden beans in Kentucky in 1963, 111
---: downy mildew of lima: forecasting technique in New Jersey, 77; in the Middle Atlantic States, 316
---: Fusarium wilt of, pathogenicity of isolates from England and the United States, 846
---: mosaic, disease incidence lower and yields higher in early season planting compared with mid- and late-season planting in central Washington, 789
---: seed-borne disease of, 453
---: southern mosaic virus, transmitted by bean leaf beetle, 935
---: tobacco mosaic virus, on pinto, infection increased by silver nitrate, 21
---: tobacco necrosis virus, on mung, first mobile assay, 24
Belonolaimus longicaudatus: on Ormond Bermuda grass, control, 625
Bemesia tabaci: 902
Birdsfoot trefoil: decline due to grubs, fungi, and bacteria, 406
Black heart: of banana, 134
Black shank: of tobacco: affected by weather in Virginia, 32; bidi var. K. 20 has good tolerance of, in India, 947; spread by overhead irrigation, 35
Black shoulder: of tomatoes, possibly a physiological disease invaded by Alternaria tenuis, 965
Blast disease: of rice, assessment of losses due to, 711
Blight: northern leaf, of corn, 943
---: of peanuts in Maryland and Virginia, leaf, stem, peg, and pod symptoms, 519
---: of pear, early references to in California, 871
---: southern, soil treatments ineffective for control on tomato, 957
Blueberry: Fusicoccum canker, first report on cultivated highbush for Michigan, 687
---: nematodes, two species associated with roots of the cultivated highbush, 170
---: root-rot of, in North Carolina, 460
---: stunt and mosaic in New Hampshire, 286
Blue mold: of tobacco: in Israel, 106; new distribution in Mexico, 524
Book reviews: "Annual Review of Phytopathology," 71
Botryosphaeria ribis: causing dieback and stem canker of Rhododendron, 207
Botrytis cinerea: on peanut, 519
Branch wilt: of fig, 142
Brazil: 784
Breadfruit: a new leaf blotch from India, 292
Broomrape: of tobacco, first report from North Carolina, 508
Brown leafspot: screening of 41 Bromus spp. for resistance, 402
Brown spot: of longleaf pine, cycloheximide derivatives compared with Bordeaux for control, 551

Caladium bicolor: treatments for control of root knot, 568
Caliciopsis spp.: on western conifers, host range and distribution, 677
California: 90; 204; 206; 258; 749; 808; 828; 871
Canada: 69; 615; 735

Cankers: annual, on maple, caused by fungi infecting wounds made by red squirrel, 794; of aspen, distribution in Colorado, 610
Carica papaya: growth inhibition, mortality, and seedling damping off influenced by tissue incorporated in the soil, 8
Carnation: effects of four viruses on yield and quality, 5; heat cure of viruses, 143
Carrots: sour rot of, previously undescribed market disorder, 837
Cattleya: blossom brown necrotic streak, orchid disease, 936
Celery: transplants, root dip treatment for control of root-knot nematodes, 782
Cephaleuros virescens: on Lee tangerine, 478
Ceratocystis canker: of aspen in Pennsylvania, 441
--- coerulescens: 788
--- fagacearum: 913; 967
--- ulmi: 308; 324; 781; method for extracting spores from elm twigs, 654; perithecial state of, in Ontario, 615
Ceratoma trifurcata: vector of bean pod mottle virus, 935
Cercospora-Alternaria: leaf blight complex of cotton, 466
--- jujubae: 914
--- kikuchii and nicotianae: experimental infection of Nicotiana spp., 693
--- rhizophorae: primary pathogen in leafspot disease on red mangrove, 909
--- sequoiae var. juniperi: 418
Cercosporella herpotrichoides: inoculation of winter wheat with, 863
Charcoal rot: induced in grain sorghum with use of Arizona climate, 300
Chemicals: for control of wheat stripe rust, 162; effective against colonization of Fomes annosus on shortleaf pine, 886
---: calcium nitrate for control of tomato southern blight, 63
---: dimethoate, potato seed-piece treatment for root-knot nematode control in the greenhouse, 881
---: dwarfing compounds added to fixed copper sprays for control of bacterial spot of pepper, 548
---: glycerine-water solution, for humidity control, 66
---: growth regulators, influence of four on internal browning of tomato, 528
---: nickel sulfate hexahydrate plus maneb in an oil carrier for control of wheat stem rust, 154
---: PCNB, TCNA, and mucochloric anhydride for control of clubroot of crucifers, 51
---: polybutene emulsion for control of leaf mold of tomato, 104
---: propylene oxide, a sterilant for sporulation of Leptodiscus terrestris in culture, 770
---: soil fumigants: several tested for control of Verticillium wilt, 502; soil applications of methyl bromide-chloropicrin and Vorlex increased Easter lily bulb production, 26
---: sulfur dioxide for control of postharvest fungal infections, rate of sorption by raspberries and containers, 879
Chenopodium amaranticolor: apple chlorotic leaf spot virus transmitted to apple from, 678; local lesion host for turnip mosaic virus assay, 491
--- quinoa: 936
Cherry: botrytis blossom blight of, fungicide evaluation, 295
---: fruit rot, new disease in India, 100
---: leaf spot, fungicide evaluation, 295
---: little cherry virus, 124
---: necrotic ring spot virus, in seedlings in the Pacific Northwest, 280
---: sour cherry yellows virus, longevity in seeds, 338
---: spindle gall, on roots of mazzard, 728
---: twisted leaf virus, Royal (Blenheim) apricot is a symptomless reservoir of, 548
---: virus gummosis of Montmorency, 277
Citrus: canker, eradication in southern States, 30
---: Cephaleuros virescens, Lee tangerine may be hypersensitive to, 478
---: green mold, biphenyl resistant spores increased by sodium orthophenylphenate in lemon packing houses, 43
---: "little leaf" (stubborn) disease of, in Israel, 761
---: nematodes: burrowing, spreading decline caused by, tests with DBCP for control, 544; plant-parasitic: distribution in Puerto Rico, 375; 17 genera found in blight areas, 95
---: Phomopsis citri, inhibition in vitro by 9 fungicides and by water extracts from orange, 925

---: seedling yellows virus, transmission by Aphis gossypii, 131
---: Tylenchulus semipenetrans, control in microplot experiments, 471
---: viruses, transmission by dodder, 102
Chlorotic dwarf disease: of eastern white pine, effects of nutrition, 107
Chokecherry: eastern X-disease of, in Canada, 735
Chrysanthemum: effect of 3 levels of water-soluble salts on root-knot nematodes, 966
Cicer arietinum: Stemphylium leaf spot of, 37
Cladosporium cucumerinum: 801
--- ear rot: of corn, inoculation technique, 391
Climate: effects on Annosus root-rot in slash pine, 509; used to induce charcoal rot in grain sorghum in Arizona, 300
Clinogyne dichotoma: leaf spot of, caused by a Heterosporium sp. in India, 567
Clover: red: interrelationships between clover yellow mosaic virus, white clover mosaic virus, and parasitic fungi in the clover root rot complex, 723; screening of 53 species for resistance to Stemphylium sarcinaeforme, 669; seed transmission of viruses attempted, 270
Clubroot: of rutabaga, in Louisiana, 574; test for resistance in 112 cultivated crucifers, 47; three chemicals tested for control, 51
Colletotrichum lagenarium: 619
--- orbiculare: [= C. lagenarium], 331
Colorado: 562
Conifers: Caliciopsis spp. on, 677; foliage diseases (other than rusts) in Colorado, 562
Connecticut: 974
Coral bells: cleistothecia of a powdery mildew on, 416
Corn: abnormality resembling corn stunt in Louisiana in 1963, 645
---: Cladosporium ear rot, inoculation technique, 391
---: Diplodia ear rot, two epiphytotics of, 414
---: diseases in Kentucky in 1963, 111
---: hail damage, effects on yield and stalkrot infection, 169
---: Helminthosporium turcicum, chlorotic lesion resistance found in yellow dent, white dent, pop, and sweet endosperm types, 777
---: leaf blight infection increases frost susceptibility, 815
---: nematodes: 13 spp. associated with corn in Wisconsin, 458; control with Vorlex and D-D, 122
---: northern leaf blight, low temperatures and humidities favor long time viability of conidia, 943
---: Puccinia sorghi and P. polysora in Mexico, 425
---: stunt virus disease: in Kentucky, 742; distribution in the United States through 1963, 640
---: viruses: mechanically transmissible virus isolated from corn in Arkansas, 661; new virus disease possibly caused by sugarcane mosaic virus in California, 749
Corrections: 235; 420; 914; 997
Corynebacterium sp.: cause for seedborne disease of beans, 453
--- fascians: 913
--- flaccumfaciens var. aurantiacum: 823
Corynespora blight: of sesame in Mississippi, 608
Cotton: bacterial blight, inhibition of, 268
---: Cercospora-Alternaria leaf blight complex, 466
---: damping-off, testing fungicides for control, 480
---: diseases, reduction in yield caused by, 1963, 294; disease-insect complex, influence on seedlings, 599
---: fungal complex associated with the sudden wilt syndrome in California, 90
---: fungicide-insecticide, applied at planting time, 241
---: Fusarium wilt of, effect of nitrogenous fertilizers, 950
---: mottle disease, incidence in Lower Rio Grande Valley in 1959, 955
---: Rhizopus boll rot, evaluation of fungicides for control, 359
Covered smut: of oats, 120
Cranberry: effects of Zinophos on nematode populations and yields, 172
Cranesbill: infected by soybean Phytophthora, 140
Criconemoides xenoplax: effects of cropping on population levels, 218
Cronartium comptoniae: 530
--- fusiforme: caulicolous telia and uredia on Quercus nigra, 366; first report of albino form of fusiform rust fungus, 686
--- ribicola: 532
Cropping: of 14 plants for 6 months, effects on nematode population levels, 218

Crown gall: on fruit trees, widely spread in Kansas, 664; on macadamia, first report, Hawaii, 673
Crown rust: of oats, 763
Crucifers: antibiotic used in asexual propagation of cauliflower, 623
---: clubroot: 112 cultivated crucifers tested for resistance to, 47; effect of three chemicals on control, 51; list of plants tested in greenhouse for, and grade of infection, 47; of rutabaga in Louisiana, 574
---: downy mildew, on broccoli, controlled with copper and maneb, 593
---: Macrophomina phaseoli, Brassica campestris is a new pycnidial host for, 928
Cucurbits: angular leaf spot of cucumber, in Israel, 256
---: anthracnose of, three new races of causal organism, 619
---: cucumber anthracnose, detached leaf method of screening fungicides for control, 331
---: cucumber scab, in western Washington, 801
---: downy mildew, unusual epiphytotic on muskmelon, 258
---: infectious variegation virus of citrus, supplement to 1963 report on reaction of West India gherkin to, 420
---: latent virus, distribution in some cucurbit growing areas, 321
---: powdery mildew, inheritance of resistance, 54
---: squash mosaic virus, epiphytotics at Ames, Iowa, 41
Cultures: detached-leaf technique for cereal rusts study, 906; stock, maintaining virulence of sweetpotato wilt Fusarium in, 817
Curvularia spp.: 853; pathogenicity on Kentucky bluegrass in Washington, D. C., 978
Cuscuta subinclusa: 102
Cytospora chrysosperma: 588

Damping-off: of conifers, fungicide control trials, 12; of cotton, tests of fungicides for control, 480; of Tephrosia vogelii seedlings controlled by thiram seed treatment, 714
Datura inoxia: new host of cucumber mosaic virus, 603
Decline: of maple, a die-back disease, 914; of pear, in California, 1960-62, 204
Dematophora root rot: of Hypericum, 139
Dew: moisture factor enabling early blight epidemics in Israel, 211
Die-back: of ash, survey of condition of trees in the Northeast, 974
Dioryctria zimmermani: 530
Diplodia ear rot: of corn, two epiphytotics, 414
Diseases: in Kentucky in 1963, 111; new to Illinois, 123 organisms attack 101 host plants, 866; reduction in yield of cotton caused by, 294
Distribution: of corn stunt disease in the United States through 1963, 640; of Phytophthora and Pythium in pineapple soils of Hawaii, 848
Dollarspot: of turfgrass, 254
Douglas-fir: Rosellinia herpotrichioides on seedlings, first report for Washington, 512; Schizophyllum commune isolated from stored cones, 234
Downy mildew: of broccoli heads, controlled with copper and maneb, 593
--- ---: of lima bean: forecasting technique in New Jersey, 77; in the Middle Atlantic States, 316
--- ---: of muskemelon, unusual epiphytotic, 258
--- ---: of sorghum, in Texas, 249
Dutch elm disease: control treatment, negative results, 308; distribution in North Carolina, 1963, 578; in Nebraska, 781; new resistant clone, 187; perithecial state of Ceratocystis ulmi in Ontario, 615; spread in Kansas, 1963, 324
Dwarf bunt: additions to the host range of, 575; of wheat, overwintering of race T-18 in Oregon, 379
Dwarfmistletoe: found on Monterey pine for the first time, 912

Early blight: epidemics on tomato and potato in Israel, 211
Eggplant: Verticillium wilt of, 62; yellows disease, controlled through chemical control of tobacco flea beetle vector, 811
Egypt: 143
Elasmopalpus lignosellus: 875
Elm: Dutch: in Kansas, 324; in Kentucky, 111; in Nebraska, 781; in North Carolina, 578; control treatment, negative results, 308; method for extracting Ceratocystis ulmi spores from twigs, 654; new clone, Groeneveld, is resistant to Dutch elm disease, 187; perithecial state of Ceratocystis ulmi in Ontario, 615
Elytroderma needle blight: on knobcone pine in California, first published report 828
Epidemics: early blight in Israel, 211
Epitrix hirtipennis: 811

Erwinia amylovora: chemical control of, in vitro, 182; Stewart strain of Bartlett pear susceptible to natural spread of, under eastern conditions, 892
Erysiphe cichoracearum: 310; 933
--- graminis f. sp. tritici: 262
--- polygoni: 310
Ethiopia: 672

Faciation disease: of Pelargonium, introduced into Oregon on miniature geraniums, 913
Fertilizer: nitrogenous, effect on Fusarium wilt of cotton in the U. A. R., 950; organic manures used to combat plant parasitic nematodes in Egypt, 894
Fig: branch wilt of, 142
Fire blight: of Bartlett pear, Stewart strain is very susceptible to natural spread under eastern conditions, 892; chemical control of, in vitro, 182; maximum orchard susceptibility of pear and apple, 272
Flag smut: of wheat, reaction of 67 varieties in the Pacific Northwest, 895
Florida: 442; 718; 994
Fluorescent: spots in wheat associated with Aspergillus glaucus group, 283; spots in wheat associated with Xanthomonas translucens, 797
Fomes annosus: 110; 114; 803; 886; microbial characteristics of slash pine soils affect growth of mycelium from infected to healthy roots, 873; root-contact infection in loblolly pine, 767
Foot rot: of rice in India, 340
Frost: susceptibility in corn increased by leaf blight infections, 815
Fruit spot: new disease of Annona squamosa, in India, 399; of pepper, caused by Helminthosporium sp., in India, 733
Fruit trees: extraction of viruses from petals, 82
Fuchsia: leaf rust in Oregon, 99
Fungi: associated with discoloration of rice grains, 288; complex of symptoms associated with sudden wilt of cotton, 90; evaluation of soil fumigants for control, 194; factorial greenhouse experiments to study virus-fungus interrelationships in a root-rot complex in red clover, 723; facultative, relationship to grubs and bacteria on decline of birdsfoot trefoil, 406; foliage disease of conifers in Colorado, 562; infected red squirrel teeth wounds cause cankers on maple, 794; involved in growth inhibition, seedling damping off, and mortality of papaya, 8; location of contaminants in peanut kernels from intact pods, 980; nematophagous, stimulated by organic manures in Egyptian soil, 894; relationship to fluorescent spots in wheat, 283; technique for mounting and photographing, 514
Fungicides: availability of "Fungicide-Nematocide Tests" Vol. 19, 420; comparison of eight, for control of turf diseases, 433; for control of bacterial spot of peach, 152; evaluation of, for control of Rhizopus boll rot of cotton, 359; four, showed significant inhibition of Xanthomonas malvacearum, 268; nine compared with water extracts from orange for inhibition in vitro of Phomopsis citri on citrus, 925; testing for control of cotton damping-off, 480; trials to control damping off of conifers, 12; two, reduced soft rot in washed, cured sweetpotatoes, 606
---: copper and maneb for control of downy mildew on broccoli, 593
---: Dyrene, promising control for pecan scab, 572
---: fruit, greenhouse evaluation of, 295
---: -insecticide, on cotton at planting, 241
---: mixture of maneb and nickel sulfate for control of asparagus rust, 436
---: organic, bactericidal action against Erwinia amylovora and fire blight control in vitro, 182; organic mercury compounds for control of apple scab, persistence of spray residue in the fruit, 525
---: PCNB-landplaster for control of peanut pod rot, 349
---: seed treatment, compared for control of Aspergillus crown rot of peanut, 264; effects on seed germinability and emergence of peanut after prolonged storage, 821; thiram seed treatment controlled damping-off of Tephrosia vogelii seedlings in Puerto Rico, 714
---: zineb-nickel chloride spray reduced prevalence of wheat rust in U. A. R., 681
Fusarium spp.: 169; 344
--- moniliforme: possible cause for black heart disease of banana, 134
--- oxysporum: 723
--- --- f. asparagi: 364
--- --- f. lycopersici: race 1, test for resistance in tomato varieties, 690

--- --- f. perniciosum, 648
--- roseum: 723
--- wilt: 199; of bean, pathogenicity of isolates from England and the U. S., 846; of cotton, effect of nitrogenous fertilizers on, 950; of sweetpotato, maintaining virulence in 5 stock cultures, 817
Fusicladium effusum: 572
Fusicoccum putrefaciens: canker found for first time in Michigan in 1962, on blueberry, 687

Georgia: 70; 89; 873; 956
Geotrichum candidum: 837
Geraniums: miniature, introduced the fasciation disease into Oregon, 913
Ghost-spot: of green peppers in Florida, 325
Gibberella fujikuroi: 340
--- saubinetii, 754
Gliocladium roseum: 68
--- vermoeseni: 718
Glomerella cingulata var. orbiculare: three new races on cucurbits, 619
Gramineae: comparison of eight fungicides for control of turf diseases, 433; ozone toxicity in small grain, 919
---: Bahia grass, Sclerotinia blight of, in Alabama, 418
---: Bermuda grasses: Bayer 25141 for control of Hypsoperine nematode larvae on Zoysia and Bermuda grasses in Maryland, 721; scale insect related to death of, 228; Ormond Bermuda grass, effect and control of sting nematodes on, 625; root-knot nematode on African Bermuda grass in New Mexico, 964
---: bromegrass, screening of 41 spp. for resistance to brown leafspot, 402
---: California oatgrass, Anguina sp. found on, in Oregon, first report in the Northwest, 990
---: Kentucky bluegrass, pathogenicity of Helminthosporium and Curvularia spp. on, 978
---: nutgrass, Sclerotinia blight of, in Mississippi, 742
---: St. Augustine grass, new host for sugarcane mosaic virus, 442
Grapes: Xiphinema index associated with grape fan leaf virus, and grape yellow mosaic virus in Argentina, 373
Green mold: of citrus, 43
Grubs: white, relationship to fungi and bacteria on decline of birdsfoot trefoil, 406
Guizotia abyssinica: diseases of in Ethiopia, 672
Gummosis: of Montmorency cherry, 277
Gymnosporangium gracile: 93

Hawaii: 848
Head smut: of sorghum, in Texas, 249
Heart rot: of oak, progress varies with tree height, 585
Heat treatments: for control of nematodes in eastern redcedar roots, 862; for eliminating viruses from sweetpotato, 356; and excision of axillary buds of strawberry eradicated latent A virus, 929
Helminthosporium spp.: 733; pathogenicity on Kentucky bluegrass in Washington, D. C., 978
--- gramineum: 708
--- leafspot: apple variety resistance to, 954
--- oryzae: 288
--- turcicum: 815; chlorotic-lesion resistance in corn conditioned by a single dominant gene Ht, 777; (Trichometasphaeria turcica), low temperatures and humidities favor long time viability of conidia, 943
Hemicycliophora similis: 172; on blueberry roots, 170
Heterodera spp.: in India, 235
--- glycines: 10 new hosts for, 388; physiological strains, 542
--- schachtii: 229; negative control with seaweed extract "Sea Magic", 396
Heterosporium leaf spot: new disease on Clinogyne dichotoma in India, 567
Hoja blanca: method to determine reaction in rice, 176
Hop: clusters, virus and viroid diseases in Idaho and Washington, 311
Horse-radish: turnip mosaic virus from, susceptibility of higher plants to isolate, 259
Hosts: purple nutsedge, important host of plant nematodes in Florida, 994
Hot water treatments: of caladium seed tubers to control root knot, 568; possible cause for decay of lemons in packing houses, 808
Humidity: system for control, 66
Hyacinth: Uromyces scillarum, depth of penetration in bulbs, 557
Hydrocotyle sibthorpiodes: root-knot nematode infested, 307
Hypericum calycinum: Dematophora root rot of, 139
Hypsoperine sp.: on Zoysia and Burmuda grasses, controlled by Bayer 25141, 721

Idaho: 311
Illinois: 866
Impatiens sultani: naturally infected with cucumber mosaic virus, 603

India: 100; 235; 292; 397; 399; 629; 733
Insecticides: for control of sugarcane mosaic virus, 636; Monsanto 40294 most effective for control of tobacco flea beetle vector of eggplant yellows, 811
Insects: disease-insect complex, possible tolerance of cotton seedlings to, 599
Internal browning: of tomato, 528
Irrigation: overhead, possible cause for spread of black shank of tobacco, 35
Israel: 211; 256

Juglans regia: not susceptible to isolates of Verticillum albo-atrum, 69
Jujube: leaf spot of, first report in the U. S., 914
Juniperus spp.: magnesium deficiency resembles blight, 581
--- virginiana: heat treatment of nematode-infested roots, 862; needle blight of, in Missouri, 418

Kansas: 324; 664
Kentucky: 111; 742

Landplaster: with PCNB for control of peanut pod rot, 349
Leaf blight: Cercospora-Alternaria complex of cotton, 466; of corn, infection increases frost susceptibility, 815
Leaf blotch: of breadfruit, in India, 292
Leaf mold: of tomato, control with a polybutene emulsion, 104
Leaf roll: non-infectious, of tomato, 18
Leaf rust: in Oregon, 99
Leaf spot: of Cicer arietinum, 37; Helminthosporium, apple variety resistance to, 954; on red mangrove, 909; new disease on rose in India, 397; of Zizyphus jujuba, first report in the U. S., 914
Leather rot: of Louisiana strawberries in 1964, 747
Lemon: hot-water washing possibly causes storage decay in packing houses, 808
Leptodiscus terrestris: propylene oxide sterilized culture technique for growth and sporulation of, 770
Lethal decline: of strawberry, graft transmission, 833
Lettuce: mosaic virus transmission through the gametes, 522
Light: effect on growth of Verticillium albo-atrum, 484
Lilium longiflorum: bulb production increased by two soil fumigants, 26
Lima bean: see Bean, Lima
"Little leaf" (stubborn) disease: of citrus in Israel, 761
Losses: assessment of loss due to: paddy blast, 711; stripe disease of barley, 708
Louisiana: 574; 645

Macadamia: crown gall of, first report, Hawaii, 673
Macrophomina phaseoli: on coniferous nursery trees in California, 206; pycnidial stage found on Brassica campestris, 928
Mangrove: red, leafspot of Cercospora rhizophorae causal fungus, 909
Maple: annual cankers of, caused by fungi that infect wounds made by the teeth of red squirrels, 794; decline of, 914; disease in Kentucky in 1963, 111; sapstreak disease found in Northeast for the first time, 788
Market disease(s): of fruits, in India, 629; sour rot of carrots, 837
Marmor brassicae: bioassayed on Chenopodium amaranticolor, 491; host range study, 259
--- lineopictum: mechanically transmitted to 16 hosts, 616
--- melonis var. obscurum: 41
Maryland: 489; 696; 721
Massachusetts: 974
Meloidogyne spp.: new non-volatile, residual-type nematocide (Shell SD 7727) effective against, 634; (possibly M. arenaria) on African Bermuda grass, first report from New Mexico, 964
--- arenaria: on Chrysanthemum morifolium, effect of 3 levels of water-soluble salts on, 966
--- hapla: on irrigated areas in Washington, 190; on potato, chemotherapeutic control by dimethoate treatment of seed-pieces, 881
--- incognita: on caladiums, treatments for control, 568
--- --- acrita: on celery transplants, root dip treatment for control, 782
--- --- incognita: 199
--- javanica, on two unrecorded hosts, 476
Methods and techniques: biological, for testing efficiency of peanut seed treatments, 853; compact system for humidity control, 66; comparison of 3 sealing methods with a standard nematocide application for control of root knot, weeds, and Fusarium wilt, 199; comparison of 2, for maintaining virulence in 5 stock cultures of sweetpotato wilt Fusarium, 817; detached leaf, to screen fungicides for control of cucumber

anthracnose, 331; modified detached leaf culture, for study of cereal rusts, 906; extracting spores of Ceratocystis ulmi from elm twigs, 654; heat therapy for obtaining virus-free apple clones, 343; heat treatment for eliminating viruses from sweetpotato, 356; inoculating sugarcane for red rot in India, 991; inoculation, for ear rot of corn, 391; mass inoculation of winter wheat in the field with Cercosporella herpotrichoides, 863; modified Cormack and Lebeau, for infecting wheat with Typhula spp., 394; modification of centrifugal-flotation technique of Caveness and Jensen for rapid separation of nematodes from soil, 692; mounting and photographing fungi, 514; self-feeding device for inoculating plant foliage, 741; to determine reaction of rice to hoja blanca, 176; to differentiate similar sclerotial fungi by addition of leaf spp. to buffered water agar cultures, 770; statistical, for estimating loss caused by stripe disease of barley, 708; statistical, for estimating loss caused by paddy blast, 711; weather observing equipment in plant disease research, 704
Mexico: 425; 524
Michigan: 687
Mimosa: vascular wilt of wilt-resistant cultivars, 648
Mississippi: 367; 588; 686; 742
Missouri: 418
Molds: blue and green, of lemon in packing houses, 808; relationship of pod damage to kernel damage by, in peanut, 875
Montana: 68
Mule's ear disease: of peach, in Colorado, 586
Mycophagous nematodes: 428
Myzus persicae: 984

Nebraska: 781
Nectria sp.: 588
Needle blight: of eastern redcedar, in Missouri, 418
Nematocides: availability of "Fungicide-Nematocide Tests" Vol. 19, 420; Bayer 25141 superior to DBCP in control of Hypsoperine sp. damaging Zoysia and Bermuda grasses, 721; Bayer 25141, excellent control of sting nematode on Ormond Bermuda grass, 625; comparison of 3 sealing methods with a standard application for control of root knot, weeds, and Fusarium wilt, 199; control of citrus nematode in microplot experiments, 471; DBCP, effect on woody ornamentals, 499; DBCP tested for control of spreading decline of citrus caused by burrowing nematode, 544; D-D, for control of corn nematodes, 122; effects of D-D and Dowfume MC-2 as planting site fumigants on growth and development of loblolly pine, 986; effect of repeated applications on vegetable yields and nematode populations in muck soil, 698; effects of Zinophos on populations and on cranberry yields, 172; evaluation for control of nematodes, weeds, and soil fungi, 194; fumigation of seedling pine plots, 534; onion yield increased by control of stubby-root, root-knot, and lesion nematodes, 225; 409; root dip treatment for control of root-knot nematodes on celery, 782; root-knot, pin and lesion, effect of 5 nematocides on populations in muck soil, 698; Shell SD 7727, new non-volatile, residual-type effective against root-knot nematode, 634; Vorlex, for control of corn nematodes, 122; Vorlex best of 3 chemicals tested for control of Verticillium wilt of peppermint by soil fumigation in muck soil, 690
Nematodes: evaluation of soil fumigants for control, 194; influence of preceding vegetable crop on populations the following year, 500; purple nutsedge is an important host in Florida, 994; stubby-root, root-knot, and lesion, onion yield increased following control, 409; 13 species associated with corn in Wisconsin, 458
---: free-living: centrifugal-flotation technique for separation from soil, 692; on corn, control with Vorlex and D-D, 122
---: mycophagous, Aphelenchus avenae for control of Rhizoctonia solani in culture, 428
---: plant-parasitic: associated with pine in 7 southern States, 60; associated with Sabal palmetto in Florida, 533; distribution on citrus, in Puerto Rico, 375; 17 genera recovered from citrus blight areas, 95; on strawberry, in Illinois, 451
---: predaceous, control of by stimulating growth of nematophagous fungi with organic amendments, 894
---: root-knot: effect of fallowing and flooding in peat soil, 303; on Hydrocotyle sibthorpioides, 307; possible biological control, 167

New diseases: russet crack of sweetpotatoes, virus or viral complex, found in New Jersey, 149; unidentified foliar disease of pepper seedlings, found in Georgia, 89; virus gummosis of Montmorency cherry, found in Oregon and Washington, 277
--- ---: In India: fruit rot of cherries, 100; fruit spot of Annona squamosa, 399; Heterosporium leaf spot on Clinogyne dichotoma, 567; leaf blotch of breadfruit, 292; leaf spot of rose, 397
--- ---: in the United States: leaf spot of Zizyphus jujuba caused by Cercospora jujubae, previously occurring only in India, found in Florida, 914; 58 probable new diseases found in Illinois, 866
New distribution: Anguina sp. on California oatgrass in the Northwest (Oregon), 990
---: blister rust of limber pine in southern Idaho, 532
---: broomrape on burley tobacco in North Carolina, 508
---: Ceratocystis canker of aspen in Pennsylvania, 441
---: leaf rust of wheat in New Jersey, 653
---: needle blight of eastern redcedar in Missouri, 418
---: Sclerotinia blight of Bahia grass in Alabama, 418
---: tobacco blue mold in Nayarit, Mexico, 524
---: Tylenchorhynchus trilineatus in the United States (Florida), 533
New Hampshire: 974
New hosts: Agrobacterium tumefaciens on macadamia in Hawaii, 673
---: cucumber mosaic virus on Datura inoxia, 603
---: dwarfmistletoe on Monterey pine, 912
---: Erysiphe cichoracearum on Acaena fissistipula, A. novae-zelandiae, Baccharis pilularis, Frazinus americana, and Scrophularia californica in the United States, 310
---: Erysiphe polygoni on Arabis blepharophylla in the United States, 310
---: Gliocladium roseum on Psilotum nudum, 68
---: Gliocladium stem rot on palm, 718
---: Hendersonula toruloidea on Ficus carica, 142
---: Heterodera avenae on maize in India, 235
---: Heterodera glycines on 10 new hosts, 388
---: Macrophomina phaseoli (pycnidial stage) on Brassica campestris var. sarsoon, 928
---: Meloidogyne javanica on Zanthoxylum clava-herculis and Z. simulans, 476
---: Podosphaera leucotricha on Prunus amygdalus in the United States, 310
---: root-knot nematode on African Bermuda grass in New Mexico, 964
---: Rosellinia herpotrichioides on Sitka spuce and Douglas-fir in Washington, 512
---: Sclerotinia homeocarpa on nutgrass, 742
---: soybean cyst nematode on Penstemon digitalis, 542
---: sugarcane mosaic virus: on St. Augustine grass, 442; on several new hosts, 443
---: Tilletia controversa, additions to host range of, 575
New Jersey: 653; 974
New Mexico: 381; 964
Nicotiana spp.: 25 spp. and 10 interspecific crosses indexed for susceptibility to Cercospora kikuchii and C. nicotianae, 693
Nigeria: 888
Nitrogen: effect of carriers on dollarspot of turfgrass, 254
North Carolina: 508; 578
North Dakota: 703
Nutrients: deficiency of boron, symptoms on roses in the greenhouse, 948; deficiency of magnesium in juniper resembles blight, 581
Nutsedge: purple, important factor in maintaining harmful populations of plant nematodes in Florida, 994

Oak: Cronartium fusiforme rust on, 366
---: heart rot, progress varies with tree height, 585
---: wilt: distribution extended in additional counties of Arkansas and Oklahoma, 913; in Arkansas, 1950-63, 370; inoculation success directly proportional to spore dosage, 967; in Texas, 419
Oats: crown rust, international register of pathogenic races, 763
---: diseases in Ohio in 1963, 487
---: ozone: importance of variety in plant damage, 923; toxicity in, 919
---: seed treatment for control of covered smut, 120
Ohio: 487
Oil: carrier of various chemicals for control of wheat stem rust, 154
Oklahoma: 913

Olive: Polyporus oleae on, 70
Olpidium: assay for tobacco necrosis virus, 24
Onion: yield increased following nematode control, 409
---: smut, first occurrence in Egypt, 143
---: stubby root, control by soil fumigation, 225
---: yellow dwarf virus in seed and sets, and in seed fields in New York, transmitted by 3 aphid vectors, 941
Orange: sweet, as an indicator for concave gum and psorosis virus, 56
Orchardgrass: twist disease in Virginia, 119
Orchid: cattleya blossom brown necrotic streak, 936; terete Vanda, firm rot disease of leaves caused by Pseudomonas andropogonis in Hawaii, 736
Oregon: 277; 913; 990
Ornamentals: woody, tests for phytotoxicity to DBCP, 499
Orobanche sp.: 508
Ozone: importance of variety in plant damage, 923; toxicity in small grain, 919

Pacific Northwest: 280; 895
Paddy: (see rice)
Palm: Gliocladium disease of, first report of this disease in Florida and first report on this host, 718
Pathogenicity: of bean wilt Fusarium isolates from England and the United States, 846; of Phytophthora and Pythium in pineapple soils in Hawaii, 848
Peach: bacterial spot of, control with copper-zinc chromate and dodine, 152
---: brown rot, fungicide evaluation, 295
---: mule's ear disease of, in Colorado, 586
---: seed rot and seedling tip necrosis caused by Penicillium sp., 136
---: wart disease, test on seed transmission, 996
Peanut: location of fungal contamination in kernels from intact pods, 980; terrestrial microflora of rotted and sound pods influenced by isolation procedures, 344
---: blight in Maryland and Virginia, 519
---: pod rot, synergistic relation between landplaster and PCNB for control in Virginia, 349
---: ringspot disease of, seed transmitted, cause unknown, 729
---: seed treatment: effect of seed-treatment fungicides on seed germinability and emergence after storage, 821; control of Aspergillus crown rot and other seedling diseases, 264; method for testing efficiency of, 853
---: Spanish, relationship of pod damage to kernel damage by molds, 875
Pear: decline, in California, 1960-62, 204
---: fireblight: fungicide evaluation, 295; history in California, early references, 871; maximum orchard susceptibility to, 272; Stewart strain of Bartlett pear is very susceptible to natural spread under eastern conditions, 892
---: stony pit virus disease: in New York, 382; prevalence in Bosc pears, New York, 385
Peas: Aphanomyces root rot, control with aminobutyric acid and methylaspartic acid, 537; bacterial blight of, in Wisconsin, 318; new streak-producing virus related to red clover vein mosaic, 494; pod streak symptoms vary with age at virus infection, 564; resistance to bean yellow mosaic virus and common pea mosaic virus conditioned by a common genotype, 353
Pecan: scab control with Dyrene, 572
Penicillium sp.: cause of seed rot and seedling tip necrosis of peach, 136
--- digitatum: 808; biphenyl resistant spores increased by sodium orthophenylphenate in lemon packing houses, 43
--- italicum: 808
Pennsylvania: 441; 974
Penstemon digitalis: new host for soybean cyst nematode, 542
Pepper: unidentified foliar disease of seedlings, 89
---: bacterial leafspot caused by Pseudomonas syringae, 750
---: bacterial spot, effect of dwarfing compounds added to fixed copper sprays for control, 549
---: ghost-spot in Florida, 325
---: sweet, fruit spot caused by an unknown species of Helminthosporium, in India, 733
---: tobacco etch and potato Y viruses isolated from, in California, 772
Peppermint: Verticillium wilt, Vorlex best of 3 chemicals tested for control, increased yields, and control of meadow nematodes, 960
Peronospora parasitica: 593
--- tabacina: on tobacco, new distribution in Mexico, 524
Pestalotia sp.: new fruit spot of Annona squamosa in India, 399
Phomopsis citri: inhibition in vitro by 9 fungicides and by water extracts

from orange, 925
--- macrospora: 588
Physalospora tucumanensis: 991
Phytophthora spp.: 848; 947
--- cactorum: 12; 747
--- cinnamomi: root-rot of blueberry in North Carolina, 460
--- megasperma var. sojae: on cranesbill, 140
--- parasitica: papaya damping off, 8
--- --- var. nicotianae: 32; 35
--- phaseoli: 77; 316
Picea pungens: fungicide trials to control damping off, 12
--- sitchensis: Rosellinia herpotrichioides on seedlings, first report for Washington, 512
Piesma cinereum: 843
Pineapple: 2 Phytophthora spp. and 8 Pythium spp. found in soils of Hawaii, 848
Pinus spp.: attempt to control annosus root-rot when regenerating infested planting sites, 803; Fomes annosus of, in Michigan, 110; microorganisms associated with Fomes annosus infection, 114; needle blight of Austrian pine in Kentucky in 1963, 111; plant-parasitic nematodes in 7 southern States, 60
--- attenuata: Elytroderma needle blight in California, first published report, 828
--- banksiana: debarking sweetfern rust infected bolts, 530
--- echinata: chemicals effective against colonization of Fomes annosus on stumps in Missouri, 886
--- elliottii var. elliottii: climate effects on occurrence of Annosus root-rot, 509; microbial characteristics of soils affect growth of Fomes annosus mycelium, 873; nematocidal plot fumigation produces lasting effect on seedling growth, 534; tipburn and death of, near electric power substations, 367
--- flexilis: new distribution of blister rust, 532
--- palustris: brown spot on, effect of cycloheximide derivatives for control, 551
--- radiata: dwarfmistletoe found for first time on this species, 912; inoculation experiments with Amylostereum sp. from a wood wasp, 438
--- strobus: effects of nutrition on chlorotic dwarf disease, 107
--- sylvestris: fungicide trials to control damping off, 12
--- taeda: effects of fumigation of planting site on growth and development, 986; root-contact infection by Fomes annosus, 767
Piricularia oryzae, 711
Plasmodiophora brassicae: 47; 51; 574
Pleurotus ostreatus: 585
Podosphaera leucotricha: 310
Pod rot: of peanut, landplaster with PCNB for control, 349
Polyporus oleae: on olive, 70
Populus deltoides: outbreak of basal canker in Mississippi, 588
Potato: chemotherapeutic control of root-knot nematode by dimethoate treatment of seed pieces, 881; importance of variety in ozone plant damage, 923; virus X strain causes spindle tuber symptoms in some varieties, 597; wart in West Virginia, 468
Powdery mildew: on Baccharis pilularis, infected only when adjacent to cultivated ground, 933; cleistothecia of, on coral bells, 416; of Guizotia abyssinica in Ethiopia, 672; mildew cultures, reactions of wheat, 262; new records for the United States, 310; resistance through breeding in Cucurbita, 54
Pratylenchus penetrans: correlated with Verticillium wilt of strawberry, 246; heat treatment of infested eastern redcedar roots, 862; on peppermint, controlled by Vorlex, 960
Pseudomonas andropogonis: cause of a firm rot disease of the terete Vanda orchid in Hawaii, 736
--- angulata: 419
--- pisi: 318
--- sesami: Race 2, 86
--- solanacearum: tomato plant survival in relation to Ca, Mg, and K levels, 88
--- syringae: bacterial leafspot of pepper, 750
Pseudoperonospora cubensis: 258
Psilotum nudum: 68
Puccinia asparagi: 436
--- coronata avenae: international register of known pathogenic races identified on revised set of 10 standard differential oat varieties, 763
--- graminis tritici: 906; culture 15-WL of race 15, 971; of wheat, chemical control, 154
--- guizotiae: on Guizotia abyssinica in Ethiopia, 672
--- polysora: in Mexico, 425
--- purpurea: 381
--- recondita: race 53, 653
--- sorghi: in Mexico, 425

--- striiformis: of wheat, chemical control, 159; 162
Pucciniastrum epilobii: 99
Puerto Rico: 375; 714
Pyrenophora bromi: (Helminthosporium bromi), 402
Pythium spp.: 848
--- aphanidermatum: 714; papaya damping off, 8
--- debaryanum: 12
--- ultimum: 12

Races: of Tilletia caries on wheat, T-19 and T-20 two new pathogenic races, 16; of Pseudomonas sesami, race 2, in Mississippi, 86; of Tilletia caries, overwintering of race T-18, 379; of Glomerella cingulata var. orbiculare, 5, 6, and 7 are three new pathogenic races, 619; of Puccinia recondita, race 53 on bean in New Jersey, first report in northeastern United States, 653; Fusarium oxysporum f. lycopersici, race 1, tomato varietal resistance to, 690; international register of pathogenic races of Puccinia coronata var. avenae, 763; culture 15-WL, race 15B, of Puccinia graminis f. sp. tritici virulent on Triticum durum 'Lakota' and 'Wells' seedlings, 971
Radopholus similis: on citrus, tests with DBCP for control of spreading decline, 544
Raspberries: Latham red, rate of sorption of various concentrations of postharvest fumigant SO_2 by berries and containers, 879; mosaic virus, rate of infection under field conditions, 839
Red rot: of sugarcane, methods of inoculating for, in India, 991
Residues: of organic mercury sprays in apple, 525
Resistance: to Helminthosporium turcicum found in several geographic areas and types of corn, 777; of new clone to Dutch elm disease, 187; of tomato to Fusarium oxysporum f. lycopersici, race 1, 690
Rhizopus boll rot: of cotton, 359
--- mangle: leafspot disease of, Cercospora rhizophorae is primary pathogen, 909
--- nigricans: 606
--- praticola: 12
--- solani: 344; 480; 714; 875; control by mycophagous nematodes, 428
Rhododendron: stem canker and die-back caused by Botryosphaeria ribis in Ohio, 207
Rice: bakanae and foot rot of, in India, 340
---: blast disease, assessment of losses due to, 711
---: grain discoloration of, 288
---: hoja blanca virus: field reaction to, 462; method to determine reaction of rice to, 176
---: "kresek" and pale yellow leaf are new symptoms of bacterial leaf blight, 858
Ringspot disease: of peanut, seed transmitted, cause unknown, 729
Root contact: possible means of spread of Fomes annosus in loblolly pine, 767
Root rot: and butt rot, of pine, effect of chemicals on infection, 886; of blueberry, in North Carolina, 460; resistance of Asparagus spp., 364; of slash pine, soil microorganisms affect spread in Georgia, 873
Rosellinia herpotrichioides: on Sitka spruce and Douglas-fir seedlings, first report for Washington, 512
Roses: boron deficiency symptoms in the greenhouse, 948; new leaf spot in India, 397
Rust: of dry bean in Brazil, 784; on grain sorghum in New Mexico, 381; prevalence in wheat reduced by sprayed mixture of zineb and nickel chloride in U. A. R., 681; spontaneous culture 15-WL of Puccinia graminis f. sp. tritici race 15 virulent on 'Lakota' and 'Wells' durum wheats, 971
---: asparagus, control with mixture of maneb and nickel sulfate, 436
---: blister, of limber pine, new distribution, 532
---: Cronartium fusiforme, albino form of, 686
---: crown, of oats, international register of pathogenic races, 763
---: leaf, of wheat, first occurrence in New Jersey, 653
---: stripe, of wheat, 159; 162
---: sweetfern, on Jack pine, effect on debarking bolts, 530
---: Uromyces muscari in hyacinth bulbs, 557
---: wheat stem, detached-leaf culture technique for study, 906
Rye: ozone toxicity in, 919

Sabal palmetto: plant parasitic nematodes on, in Florida, 533
Safflower: pathogenicity of Verticillium isolates, 456

Salt: effect of 3 levels on chrysanthemum plants infected with root-knot nematodes, 966
Sapstreak disease: of sugar maple, found in Northeast for the first time, 788
Scab: of barley, epiphytotic in South Korea in 1963, 754; of cucumber, found in western Washington, 801; of pecan, control with Dyrene, 572
Scale insect: relationship to dying out of Bermuda grass, 228
Schizophyllum commune: on Douglas-fir, 234
Scirrhia acicola: 551; germination in liquid culture inhibited by cycloheximide semicarbazone, 553
Sclerophthora macrospora: 249
Sclerospora sorghi: 249
Sclerotinia sp.: on hairy vetch, first report from Maryland, 696
--- homeocarpa: blight of Bahia grass, in Alabama, 418; blight of nutgrass, 742; effect of different Nitrogen sources on turfgrass disease incidence, 254
Sclerotium rolfsii: ecological relationships with co-existing soil microflora, 446; relationship of pod damage to kernel damage in peanut, 875; tomato southern blight not controlled by calcium and 3 soil fungicides, 957
Seed: rot of peach, 136
---: treatments: comparison of fungicides for control of Aspergillus crown rot of peanut, 264; effect of fungicide mixtures on germination and seedling emergence of stored peanut seed, 821; testing efficiency of, in peanut, 853
Seedling disease complex: of cotton, influence of diseases and insects on, 599
Seedling tip necrosis of peach, 136
Sesame: Alternaria and Corynespora blights of in Mississippi, 608
Snow mold: of wheat, inoculation technique, 394
Soft rot: of cauliflower during asexual propagation, prevented with an Agrimycin spray, 623; of sweetpotatoes, reduced by 2 fungicides, 606
Soil: microbial characteristics of, affect spread of Fomes annosus in two Georgia slash pine plantations, 873; muck, five nematocides evaluated for nematode control and vegetable yields, 698; pineapple plantations surveyed for pythiaceous fungi in Hawaii, 848
Soil treatments: for control of Meloidogyne incognita on caladiums, 568; for control of Verticillium wilt of eggplant, 62; effect on southern blight of tomato, 957; of planting site, effects on growth and development of loblolly pine, 986; with Vorlex gave best control of Verticillium wilt of peppermint, in muck soils, 960
Sorghum: charcoal rot induced in Arizona climate, 300
---: downy mildew and head smut diseases in Texas, 249
---: rust occurrence in New Mexico, 381
---: sugarcane mosaic virus transmitted by Myzus persicae, indicator for, 984
Sour rot: of carrots, previously undescribed market disorder, 837
Southern blight: of tomato, chemical control, 63
South Korea: 754
Soybean: Corynespora cassiicola in Canada, 69
---: cyst nematode on 10 new hosts, 388
---: Phytophthora isolate of, on cranesbill, 140
Sphacelotheca reiliana: 249
Sphaerotheca humuli var. fuliginea: 416
Spindle gall: first report on mazzard cherry roots, 728
Spring dead spot: of Bermuda grass, 228
Squash: see Cucurbits
Squirrels: red, fungi infected teeth wounds cause cankers on maple, 794
Stalkrot: in corn, effect on hail damage, 169
Stemphylium leaf spot: of Cicer arietinum, effect of vitamins, hormones, and trace elements on growth and sporulation, 37
--- sarcinaeforme: relative susceptibility of Trifolium seedlings to, 699
Stem rot: of palm, in Florida, 718
Storage: decay of lemons possibly caused by hot-water washing, 808; diseases of fruit, survey in India, 629; effect of seed-treatment fungicides on germinability and emergence of peanut after storage, 821; temperature and humidity affect longevity of Trichometasphaeria turcica conidia, 943
Strawberry: latent A virus, growth and fruiting of 7 infected and virus free varieties compared, 929
---: leather rot of Louisiana strawberries on Chicago market in 1964, 747
---: lethal decline of, graft transmission, 833
---: plant-parasitic nematodes in Illinois, 451
---: Verticillium wilt, correlated with PCNB and Pratylenchus penetrans, 246
Stripe disease: of barley, estimating loss caused by, 708

Stubby root: of onion, 225
Stunt: of corn, distribution in the United States through 1963, 640
Sugarbeet: negative control of Heterodera schachtii with seaweed extract "Sea Magic", 396; root diffusate, factors affecting the hatching activity, 229; transmission of savoy virus by the lacebug, 843
Sugarcane: mosaic and streak diseases of, in Egypt, 282; mosaic virus, vector-virus relationship, 636; red rot of, methods of inoculating for, in India, 991
Sweetpotato: Fusarium wilt of, maintaining virulence in 5 stock cultures, 817; heat treatment for eliminating virus, 356; russet crack, a new virus disease, 149; soft rot of, reduced by 2 fungicides, 606; veinclearing virus disease in Nigeria, 888
Synchytrium endobioticum: 468

Target spot: of red clover, 669
Temperature: effect on transmission of tobacco ringspot virus by Xiphinema americanum, 222
Tetracocosporium paxianum: 723
Tetylenchus joctus: on blueberry roots, 170
Texas: 419
Tilletia caries: overwintering of race T-18 in Oregon, 379; two new pathogenic races, 16
--- controversa: 575
Tobacco: bidi var. K.20 has good tolerance against black shank disease in India, 947
---: black shank, affected by weather in Virginia, 32
---: blue mold, in Israel, 106; new distribution in Mexico, 524
---: burley, first report of broomrape in North Carolina, 508
---: diseases in Kentucky in 1963, 111
---: flue-cured, epiphytotic of angular leafspot of, 419
---: mosaic virus, silver nitrate increased infection on bean, 21
---: rattle virus, transmission by a stubby-root nematode, 333
---: ringspot virus, nematode transmission affected by temperature, 222
Tomato: bacterial necrosis of, 558
---: black shoulder of mature-green fruit in Georgia, possibly physiological disease invaded by Alternaria tenuis, 956
---: disease in Kentucky in 1963, 111
---: Fusarium oxysporum f. lycopersici, race 1, test for presence of Ii or II genotype for resistance to, 690
---: internal browning, influence of growth regulators on, 528
---: leaf mold, control with a polybutene emulsion, 104
---: leaf roll, non-infectious, 18
---: Pseudomonas solanacearum, an epiphytotic on newly-cleared Klej sand, 88
---: southern blight: calcium nitrate for control, 63; not controlled by such soil additions as calcium nitrate, black plastic mulch, limestone, or 3 soil fungicides, 957
Transmission: of barley yellow dwarf by the greenbug, 127; of lethal decline of strawberry by graftage, 833; of lettuce mosaic virus through the gametes of the plant, 522; of peach wart virus by seed apparently does not occur, 996; of plum line pattern virus to 16 hosts, mechanical, 616; seed-borne disease of beans, 453; of southern bean mosaic virus by bean leaf beetle, 935; of sugarbeet savoy virus by the lacebug, transmission studies, 843; of tobacco rattle virus by Trichodorus allius, 333; of the virus components of citrus seedling yellows by Aphis gossypii, 131; of viruses through seed attempted in red clover, 270
Treatments: for control of Dutch elm disease, negative results, 308; root dip, for control of root-knot nematodes on celery, 782
Trialeurodes abutilonea: 489
Trichoderma sp.: 344
Trichodorus allius: control by soil fumigation, 225; transmitted tobacco rattle virus, 333
--- christiei: 172
Trichometasphaeria turcica (Helminthosporium turcicum): low temperatures and humidities favor long time viability of conidia within corn leaf tissue, 943
Turfgrass: dollarspot, effect of nitrogen carriers on, 254
Twist disease: on orchardgrass, first report on this host in Virginia, 119
Tylenchorhynchus maximus: first occurrence in Georgia, 70
--- trilineatus: first report from the United States, found in Florida Everglades, 533
Tylenchulus semipenetrans: control in microplot experiments, 471
Typhula idahoensis: 394

Urocystis agropyri: 895
Uromyces muscari: (U. scillarum), in Hyacinthus orientalis, 557

Vectors associated with: Amylostereum sp. on Pinus radiata -- wood wasp, 438
---: hoja blanca, of rice -- Sogata orizicola, 176
---: mosaic virus, of sugarcane -- brick-red sowthistle aphid, 636; mosaic virus, of sugarcane, on sorghum -- Myzus persicae, 984; mosaic virus, of Wissadula amplissima -- sweetpotato whitefly, 902
---: pod damage, of peanut -- lesser cornstalk borer, 875
---: savoy virus, of sugarbeet -- lacebugs, 843
---: southern bean mosaic virus -- bean leaf beetle, 935
---: yellows disease, of eggplant -- tobacco flea beetle, 811
---: yellow dwarf, of barley -- apple grain aphid, greenbug, English grain aphid, and corn leaf aphid, 756; -- greenbug, 127; -- three aphid species, 216
---: yellow dwarf, of onions -- Myzus persicae, Rhopalosiphum maidis, and Schizaphis graminum, 941
Vermont: 974
Verticillium albo-atrum: 69; effect of light on growth and microsclerotial production, 484; influence of vitamins on growth of two microsclerotial isolates, 649; pathogenicity of 8 isolates to safflower, 456
--- wilt: efficacy of various fumigants for control, 502; of eggplant, 62; of peppermint, Vorlex gave best yield increases of 3 chemicals, 960; of strawberry, 246
Vetch: hairy, first report of a Sclerotinia on, from Maryland, 696
Virginia: 32; 35; 119
Virus, Virus disease, abnormality resembling corn stunt present in Louisiana, 645; attempted seed transmission in red clover, 270; of citrus, transmitted by dodder, 102; of clusters hop in Idaho and Washington, 311; complex, believed to be associated with cattleya blossom brown necrotic streak, 936; extracted from fruit tree petals, 82; heat cure of carnation viruses, 143; heat therapy for virus-free apple clones, 343; isolated from corn and mechanically transmitted to several hosts in Arkansas, 661; new disease of corn in California, possibly sugarcane mosaic, 749; new streak-producing virus of pea, related to red clover vein mosaic, 494
---: alfalfa mosaic, prevalence in Minnesota, 506
---: apple chlorotic leaf spot, transmitted from Chenopodium amaranticolor to apple by inarch grafting, 678
---: barley yellow dwarf; absence of vector-specificity for acquisition and transmission of, 216; degree of resistance in Ethiopian barleys, 470; greenbug transmission, 127; 20 Kansas isolates transmitted by 4 aphid species, 756
---: bean mosaic, more damaging in mid- and late-season planting than early planting, 789
---: bean yellow mosaic, resistance in pea, 353
---: blueberry stunt and mosaic, in New Hampshire, 286
---: carnation mosaic, mottle, ringspot, and streak, transmission and yield depreciation, 5
---: citrus psorosis, sweet orange varieties as indicators, 56
---: citrus seedling yellows, transmitted by Aphis gossypii, 131
---: citrus variegation, West India gherkin reaction to, 420
---: clover yellow mosaic and white clover mosaic, importance in the red clover root rot complex, 723
---: concave gum, sweet orange varieties as indicators, 56
---: corn stunt, in Kentucky, 742
---: cotton mottle, incidence in Lower Rio Grande Valley in 1959, 955
---: cucumber mosaic on Impatiens sultani and Datura inoxia, 603
---: cucurbit latent: distribution, 321
---: eastern X-disease: of chokecherry in Canada, 735
---: grape yellow mosaic, and fan leaf viruses in Argentina, 373
---: gummosis of Montmorency cherry, 277
---: hoja blanca, of rice varieties, field reaction, 462
---: internal cork, on sweetpotato, heat treatment for elimination, 356
---: lettuce mosaic, transmission through the gametes, 522
---: little cherry, effect of four isolates on fruit size, 124
---: mosaic of Wissadula amplissima, whitefly-transmitted, 902
---: necrotic ring spot, in mazzard and mahaleb cherry seedlings, 280
---: onion yellow dwarf, occurrence in seed and sets, and in seed fields in New York, aphid transmitted, 941
---: pea mosaic, resistance in pea, 353
---: pea pod streak, symptoms vary with age at infection, 564
---: peach wart, test on seed transmission, 996
---: plum line pattern: mechanically transmitted to 16 hosts, 616
---: potato: X strain causes spindle tu-

ber symptoms in some potato varieties, 597, potato Y isolated from pepper in California, 772
---: raspberry mosaic, rate of infection under field conditions, 839
---: russet crack, a new disease of sweetpotato, 149
---: savoy of sugarbeet, lacebug transmission, 843
---: sour cherry yellows, longevity in cherry seeds, 338
---: southern bean mosaic, transmitted by bean leaf beetle, 935
---: squash mosaic, epiphytotics at Ames, Iowa, 41
---: strawberry latent A, effect on growth and fruiting of 7 varieties, 929
---: stony pit: on pear, in New York, 382; survey for prevalence in Bosc pears in New York, 385
---: sugarcane mosaic: in Egypt, 282; new hosts, 443; Myzus persicae is an efficient vector of, 984; on St. Augustine grass, 442; transmission by brick-red sowthistle aphid, 636
---: sugarcane streak: in Egypt, 282
---: tobacco etch, isolated from pepper in California, 772
---: tobacco mosaic, infection on bean increased by silver nitrate, 21; recovered from apple over a 5-year period, 855
---: tobacco necrosis, first mobile assay, 24
---: tobacco rattle, transmitted by a stubby-root nematode, 333
---: tobacco ringspot, cause of eggplant yellows, effect of flea beetle control, 811; transmission by Xiphinema americanum, 222
---: turnip mosaic: assayed on Chenopodium amaranticolor, 491; host range study, 259
---: twisted leaf of sweet cherry, symptomless on Royal (Blenheim) apricot, 548
---: veinclearing, of sweetpotato in Nigeria, 888
---: wheat streak mosaic, first report in North Dakota, 703
---: wheat striate mosaic, in Montana, 68
Vitamins: combinations of 4, effect on growth of 2 microsclerotial isolates of Verticillium albo-atrum in culture, 649

Washington: 190; 277; 311; 512; 789; 801
Washington, D. C.: 978
Weather: injuries, effect of hail damage on yield and stalkrot infection in corn, 169; equipment used for plant disease research, 704; in relation to tobacco black shank in Virginia, 32
West Virginia: 468
Wheat: association of bacteria with fluorescent spots in, 797; association of fungi with fluorescent spots in, 283; diseases in Ohio in 1963, 487
---: Cercosporella herpotrichoides, technique for field inoculation with, 863
---: dwarf bunt, overwintering of race T-18, 379
---: flag smut, reaction of 67 varieties in the Pacific Northwest, 895
---: leaf rust of, first occurrence in New Jersey, 653
---: ozone toxicity in, 919
---: powdery mildew, reactions to cultures of, 262
---: rust prevalence reduced by zineb-nickel chloride spray in U.A.R., 681
---: snow mold, screening varieties for resistance to, 394
---: stem rust: chemical control, 154; culture 15-WL of race 15 virulent on durum wheat, 971; method of culturing fungus on detached leaves, 906
---: streak mosaic virus, first report in North Dakota, 703
---: stripe rust, chemical control 159; 162
---: striate mosaic virus in Montana, 68
---: Tilletia caries, two new races, 16
Wilt: of oak: in Arkansas (1950-1963), 370; distribution extended in additional Arkansas and Oklahoma counties, 913; symptom development related to spore load and inoculation site, 967; in Texas, 419
---: vascular, of wilt-resistant mimosa cultivars, 648
---: Verticillium: efficacy of fumigants for control, 502; of pepperment, 960
Wissadula amplissima: mosaic virus of, whitefly-transmitted, 902

Xanthomonas sp.: 900
--- citri: eradication of, 30
--- kresek: synonym of Xanthomonas oryzae and new symptom of bacterial leaf blight of rice, 858
--- malvacearum: 268
--- oryzae: 858
--- vesicatoria: 549
Xiphinema americanum: effects of cropping on population levels, 218; effect of temperature on tobacco ringspot virus transmission by, 222
--- index: associated with vineyard soil in Argentina, 373

Zanthoxylum clava-herculis and Z. simulans: unrecorded hosts of Meloidogyne javanica, 476
Zizyphus jujuba: leaf spot caused by Cercospora jujubae found for first time in the United States, 914